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RESEARCH STUDIES IN POST SECONDARY EDUCATION No. 1

CA2 ALED 87 1968R01
Mount Royal Junior Colllege.
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ALBERTA JUNIOR COLLEGE COST STUDIES

NUMBER I MOUNT ROYAL JUNIOR COLLEGE

by

PETER J. ATHERTON

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APRIL, 1970

ALBERTA JUNIOR COLLEGE COST STUDIES

NUMBER I - MOUNT ROYAL JUNIOR COLLEGE

An Analysis
Prepared for the Provincial Board of Post-Secondary Education
by
PETER J. ATHERTON
Department of Educational Administration
University of Alberta
EDMONTON

August, 1968

FOREWORD

Authority for the establishment of a Provincial Board of Post-Secondary Education in Alberta was provided by a 1967 amendment to *The Public Junior Colleges Act*. Among the tasks assigned to the Provincial Board were the following :

i) to study provincial needs in the post-secondary field;
ii) to advise on matters of financial support for junior colleges; and
iii) to review and co-ordinate the work of junior colleges.

These assigned tasks require that the Provincial Board authorize that studies of many aspects of the post-secondary system be conducted -- studies which will provide information that may be considered necessary for planning for decisions to be made regarding the future of the post-secondary system.

Dr. Atherton's is one such study, and as he has indicated, this is only the first of a series of studies of college finance which should be conducted.

In this exploratory study, Dr. Atherton has, for a specified academic year and under a mutually acceptable set of clearly identified delimitations and assumptions, calculated the per student costs of operating a number of instructional programs in Mount Royal Junior College. Also he has commented upon the relationship of these costs to the revenues available to the College from all of its current sources.

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The findings of Dr. Atherton's study are highly significant to the Provincial Board in this stage of system planning and development. The Mount Royal and other college boards and administrators may also benefit both from a review of the findings and from the application in the future of the methodology of cost analyses developed in the study.

The Provincial Board is pleased that Dr. Atherton agreed to undertake the study, and is satisfied that the report meets the criteria included in the original agreement.

H. Kolesar
Chairman,
Provincial Board of Post-Secondary
Education.

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I. INTRODUCTION

In the early part of May, 1968 the Board of Post-Secondary Education for the Province of Alberta decided to initiate a series of studies of Junior College operations for the purpose of restructuring the financing of the system.

The research reported here is the first study in the series and was designed to explore the feasibility of examining the relationship between the level of support provided under the present system of operating grants, and the cost of operating the types of day program for which grants were paid during the academic year 1967-1968.

Since Mount Royal Junior College, Calgary, is one of the largest junior colleges in the Province and offers the widest variety of programs in the Province, it was considered appropriate that the first study in the series should be made for the Mount Royal Junior College.

It should be emphasized that since this study was intended to be the first of a series it is largely exploratory in nature. It should also be pointed out that the purpose of this study was more to draw attention to specific questions which might need further investigation than to provide specific or final answers. For these reasons the recommendations which constitute the final part of this report should be interpreted more as suggestions for further research than as policy recommendations.

II. THE STUDY

The Problem

This study was designed to determine the total cost per student of operating specified programs in Mount Royal Junior College for the academic year September 1st 1967 to August 31st 1968, and the relationship between the costs of operation and the existing level of grants and fees.

The specified programs were those for which operational grants were payable by the Department of Education and included both university transfer programs and terminal or career programs, but only those which were offered on a day-time basis. Specifically excluded from the study were a number of programs which were eligible for grant purposes, but which were offered on a part-time basis. The excluded programs were extension programs, summer school programs, evening credit programs, high school programs, programs associated with the fine arts conservatory, and special programs identified in the Mount Royal Junior College Calendar as "D" programs. "D" programs may be briefly described as academic preparation programs for students deficient in educational prerequisites for the programs which were included in the study.

The following programs were studied :

University Transfer Programs. University transfer programs were of two types :

a) First year programs designed to transfer to second year entry into programs at the University of Calgary; included in this type of program are those identified in the Mount Royal Junior College Handbook, 1967-1968, as programs A, C, and S.

b) First and second year junior college programs designed for transfer to senior institutions in Canada or the United States offering a four year university degree program. They are identified in the College Handbook as "B" programs.

Terminal or Career Programs. The objective of these programs is to provide one or two years of post-secondary education in specialized areas to students who wish to go directly into employment upon graduation from Mount Royal Junior College. The programs provide survey courses of general education but the bulk of the programs consist of an extensive pattern of specialized courses and laboratory sessions directly related to the students' employment aspirations. These programs are identified in the Mount Royal Junior College Handbook as "E" programs.

Limitations of the Study

There are two sets of limitations to a study such as the one being reported. The first set of limitations are common to any cost analysis. The second set of limitations are the result of inadequacies of data.

In connection with the first set of limitations, the following observations taken from a previous cost analysis undertaken at Mount Royal Junior College are particularly appropriate :

> The determination of unit costs has both advantages and disadvantages inasmuch as unit costs relate to the expenditures of a given course, department or curriculum, or of the number of students served in that division. It affords a more satisfactory index of financial performance than do cost expenditures. Various courses of study, departments, or colleges in an institution can be compared to other similar divisions through the use of per student costs so that the administration can determine which departments or courses of study are being developed,

> or utilized and which ones need increased appropriations; in this connection unit costs render important assistance to the administration in the preparing of the annual budget. [1]

Perhaps of even more importance is the following statement on the place of unit cost in educational finance :

> It is obvious that all unit cost figures are open to question because of the many assumptions upon which they are necessarily based. It is also obvious that they will change with every shift of enrolment, registration, salary scale and price level. For that reason comparisons of unit cost figures even when these figures have been computed in accordance with the same formulas should be made only with great caution. Comparisons between institutions are particularly difficult, but comparisons between similar departments of the same institutions and between different years for the same institution will be of some service. No institution should be without figures of unit expense of instruction but they should be used only with due regard for their uncertainty and complexity. [2]

The second set of limitations to a study such as this is determined by the data on which the study is based. Although the utmost co-operation was received from the administrative staff of the Mount Royal Junior College, the time at which the study was made set limitations to the quantity of data which were available. Thus, it was not possible to verify directly the faculty work load analysis on which the estimates of course costs were based, since most faculty members and department heads were on vacation or otherwise engaged when the study was conducted. Similarly it was not possible to determine the proportion of students from any program who were registered in each course. Both of the above limitations were overcome by techniques which will be described later in this report, but to overcome some of the other limitations of data it was necessary to make a number of assumptions.

---

[1] "Cost Study and Analysis" Business Office, Mount Royal Junior College, 1966 (Mimeo), p.1.

[2] *Ibid*. p.2.

Assumptions of the Study

1) It was assumed that assignment of students to sections of courses was made on a random basis.

2) It was assumed that where course registrations were shown by the Registrar's Office but not shown on the faculty work load analysis, that students were actually receiving instruction in courses numbered differently.

3) It was assumed that where the faculty work load analysis showed courses being taught without such courses appearing in the calendar, that the courses were being taught under a different description to that in the calendar.

4) It was assumed that differentials arising out of varying levels of qualification and specialization of instructional staff were cost rather than quality differentials.

III. SOURCES OF DATA AND METHODS OF ANALYSIS

Although the sources of data and methods of analysis used in the study are discussed in more detail at the appropriate sections in the report, it is considered appropriate to provide a general overview of both sources and methodology as an introduction.

Sources of Data

1) Data required for the determination of college overheads were derived mainly from monthly revenue and expenditure statements provided by the Business Office of Mount Royal Junior College. These data were supplemented by information derived from the annual auditor's report for the year 1967. Statements were available for September 1st, 1967 to April 30th, 1968. To cover the months April 30th, 1968 to August 31st, 1968 a prorata approach was used. Most expenditures recorded by the statements were prorated at a straight 33% on the grounds that the majority of expenditures constitute salaries of administrative and maintenance personnel who are employed on a twelve month basis. An attempt was made to allow for the proportion of administrative time taken up in the administration of programs and activities not included in the study. Some expenditures, particularly those related to the operation of college enterprises, including the snack bar and the book store were not prorated directly but by a percentage indicated by Mr. Armour of the Mount Royal Junior College Business Office. The estimates of Revenue and Expenditure are provided in Appendix A.

2) The estimates of direct instructional cost and of the cost of release time of departmental heads were based on data contained in an adjusted faculty work load analysis, originally prepared by junior colleges in accordance with instructions from the Chairman of the Board of Post-Secondary Education.

Although it would have been preferable to use a work load analysis specially prepared for this study, the timing of the study made such a procedure impossible.

The original faculty work load analysis was prepared in March of 1968, and there appeared to be some confusion in the minds of those completing the analysis as to whether the required information should refer to the operations of the whole year or to the second semester only.

As a result of this confusion it was found necessary to supplement the information provided by the original faculty work load analysis from a number of sources. Included among these sources were assignment schedules, made available by the Personnel Office and which provided faculty assignments for the first semester, payroll accounts made available by the Business Office and which provided information on the duties of sessional and part-time staff sometimes excluded from the original faculty work load analysis, and class lists made available by the Registrar's Office which provided data on enrolments and instructional staff for specific sections of specific courses.

In spite of the considerable time spent by the writer in verifying and adjusting the original faculty work load analysis, it is still possible that there may be some slight inaccuracies in the data on which cost estimates of instruction were based. However, it should be pointed out that the effect

of any such inaccuracies will be minimal since any cost figures which departed significantly from the average were the subject of more intensive study in order to ensure that they were a reflection of actual conditions rather than errors in data.

3) Data on enrolments were taken from two sources. The first source was the records of the Department of Education from which data on enrolments by program were obtained. These data reflect the number of students enrolled in various programs for whom grants at the existing levels were paid. The data from the Department of Education show that for the academic year 1967-1968, operational grants were paid in respect of 1,101 students. It may be interesting to compare these enrolment data with the enrolment data for extension programs in 1967. The Research Department at Mount Royal Junior College reports that for the year 1967 a total of 4,593 students were enrolled in extension programs.

The second source of enrolment data was the class registration lists provided by the Registrar's Office. These lists (shown in Appendix B) were used in the determination of instructional costs referred to in 2 above.

4) For the final stage of the study, it was necessary to prepare lists of courses which made up the requirements for the various programs offered at Mount Royal Junior College. Data for this purpose were taken from the Mount Royal Junior College Calendar for 1967.

Methods of Analysis

The approach used in this study was essentially a performance or program approach. This approach may be considered in the light of the following

quotation from the Theory and Practice of School Finance by Warren E. Gauerke and Jack R. Childress:

> A program budget is one which lays out for public inspection both the anticipated functions and activities and the projected costs of an activity. Performance budgets stress the measurment of the cost and the specific detail of the benefits to be realized from the activities supported. The first term facilitates a program review by legislative committees or boards, the second emphasizes the output and requires the complete revision of accounts and their classification. The two concepts enjoy a large overlap and frequently are interchangeable.

In the case of the present study a crude measure of output was considered as the completion of a student year in a given program. This measure is crude since it implicitly assumes a zero failure rate. However, it could be possible to improve the accuracy of the measure by incorporating some measure of cost for students who fail to complete a year.

In operational terms then, this study was directed towards the answering of a series of questions, one of which might be phrased, "What is the total cost per student of preparing students for second year entry into the general B.A. or B.Sc. program at the University of Calgary, and what proportions of this cost are covered by grants from the Department of Education and fees paid by the student or on his behalf?"

There were three distinct stages in the investigation :

1. The Classification of Costs
2. The Estimates of Costs
3. The estimates of program and per student costs.

Stage 1. The first stage consisted of a classification of expenditures. Expenditures were classified as falling into one of the following four groups :

1. Direct cost of instruction,
2. Indirect cost of instruction,
3. Cost of supporting services,
4. Cost of overhead.

Direct cost of instruction included salaries, pensions and other fringe benefits for instructors and the laboratory assistants.

Indirect cost of instruction are costs associated with the operation of the programs specified in this report and are based on the expenditures made for the academic Vice-President's Office including the academic stenographic pool, duplicating services, scholarships, utilities, maintenance and caretaking of instructional areas, new program development, the release time of departmental heads and expenditures for laboratory supplies, travel expenditures and miscellaneous expenditures charged to instructional accounts. It may be noted here that in Mount Royal Junior College the academic Vice-President's role is closely akin to that of a dean of instruction or a dean of a faculty.

The costs of supporting services were made up of expenditures on Library Services, Counselling Services and Health Services.

Overhead costs are associated with general college administration and include expenditures made for the President's Office, the Business Office, the Registrar's Office, the Information Office, pension and fringe benefits of non-instructional staff, student affairs, research and development as distinct from new program development, plant operation and maintenance of administrative areas, telephone and postage expenditures and other expenditures including athletic subsidies. Also included in this class of expenditure is the net loss on the operation of college enterprises including college residences, dining rooms, book store and snack bar. It should be noted that the total overhead cost was adjusted to take into account the proportion of administrative time taken up by duties involved with the administration of those programs specifically excluded from the study.

Stage 2. The second stage of the analysis was the determination of the varying categories of cost. There are two possible methods of computing instructional salary cost per student in junior college programs. The first method is based on a straight per student basis resulting in proportionate sharing of instructional expenditure by all programs. The second method is based on the assumption that there are courses basic to any given program and that the cost of providing such course should be charged to that program but that these same courses may enrol students from other programs without increasing the cost of providing such courses. If, however, enrolment in the courses from students in other programs increases to the point where it is necessary to provide additional sections then the cost of the extra sections should be charged to the other programs.

The first method was selected as being more appropriate for this study since the intention was to provide an estimate of cost per student year rather than per program. It may also be noted that the first method permits the isolation of high cost low enrolment courses, the identification of which may be overlooked when using the grosser measure.

The estimates of direct instructional cost per student were based on the adjusted faculty work load analysis and Registrar's class lists for two semesters. The first step was to estimate the cost of teaching each section of each course by prorating the salaries and fringe benefits of instructors by the number of hours spent with each section of each course, using a twelve hour per week teaching load as a basis for computation. The total cost of teaching each course was then obtained by summing the cost of teaching each section. Having determined the total cost of teaching each course, a per student cost of

direct instruction for each course was obtained by dividing the total number of students enrolled in each course into the total direct instructional cost. It was felt that this approach would tend to reduce variations in the per student cost of each course which may be attributable to different salary levels of instructors teaching different sections of the same course. This approach does, however, rest on the assumption that assignment of students to sections is done on a random basis.

Estimates of indirect instructional cost per student were derived by taking the total cost of indirect instruction and then prorating by the number of students registered for grant purpose.

The approach used in the costing of supporting services was somewhat different. An attempt was made to estimate the degree of utilization of each of the services by students registered in different programs. It was originally hypothesized that the utilization of each of the varying supporting services was to some extent a function of the varying programs. Accordingly an attempt was made to estimate the proportion of utilization of each of the supporting services by students enrolled in different programs. The total cost of the supporting services was then prorated by the proportion of utilization and a program cost of supporting services thereby obtained. The program cost of supporting services was then prorated by the number of students registered in each program to provide a per student cost of providing supporting services.

The total cost of overheads associated with college administration was prorated by the total student enrolment to provide a per student cost of college administration overheads.

Stage 3. The third stage of the analysis was the preparation of an estimate of cost per student year for each of the varying programs. This estimate was obtained by summing the per student cost for each course of each program specified in the calendar and adding to this cost the appropriate indirect and overhead cost per student as determined in Stage Two. Using this estimate of total cost it was then possible to determine the proportions of cost covered by grants from the Department of Education and fees, and to provide an estimate of the subsidy effect for each program.

IV. STAGES 1 & 2

THE CLASSIFICATION AND ESTIMATION OF PER STUDENT COSTS

1. Direct Instructional Cost

As noted previously the per student cost per course was determined by dividing the total registration for the course into the total cost of teaching the course as derived from the adjusted faculty work load analysis. The per student cost of teaching each course taught in the session of 1967 and 1968 is set out in Tables I and II.

A number of observations were made during the course of the computations necessary for the preparation of these tables. These are referred to specifically by footnotes in the Tables; however, it was felt that some general summary would be appropriate.

First, there are some courses shown as having student registration but which do not appear on the faculty work load analysis. It will be recalled that it was assumed in these cases that students were attending courses numbered differently but receiving credit for courses specified. A more severe problem was observed in laboratory courses. In some cases the number of hours reported on the faculty work load analysis as being devoted to laboratory work for a given course was considerably in excess of the number of hours required by the course as specified in the calendar. It is suggested that the discrepancy is probably the result of attempts to reduce the number of students taking each laboratory to provide more individual instruction. In other cases it was noted that, whereas the faculty work load analysis showed instructors devoting

TABLE I

ESTIMATES OF PER STUDENT COSTS OF TEACHING JUNIOR COLLEGE COURSES IN MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Course	Semester	Number Hours Lecture & Seminars	Number Hours Lab.	Enrolment	Cost Per Student	Programs
Acct. 100	1	3		7	161.	E
Acct. 101	2	3		6	188.	E
Biol. 110[1]	1	3	3	186	69.	B
Biol. 110[1]	2	3	3	70	24.	B
Biol. 111	2	3	3	69	86.	B
Biol. 114	1	3	3	24	33.	B
Biol. 114	2	3	3	61	26.	B
Biol. 115	2	3	3	28	96.	B
Biol. 200	1 & 2	3	3	28	185.	AC
Biol. 200	2 & 'S'	3	3	84	168.	CS
Biol. 211	2	3	3	13	125.	B
Bus. 100	1	3		7	128.	E
Bus. 101	1	3		6	149.	E
Bus. 110	1	3		91	55.	E
Bus. 111	2	3		57	87.	B
Bus. 201[2]						
Bus. 222	1	3	1	70	28.	AB
Bus. 223	2	3	1	52	38.	AB
Bus. 236[3]	1	3		51	107.	B
Bus. 237[3]	2	3		43	88.	B

[1] Calendar and Work Analysis show different times.

[2] Bus. 201 does not appear on Work Load Analysis separately.

[3] Work Load Analysis shows laboratory work not shown in Calendar.

TABLE I (Continued)

Course	Semester	Number Hours Lecture & Seminars	Number Hours Lab.	Enrolment	Cost Per Student	Programs
Chem. 110	1	3 & 1	3	24	117.	B
Chem. 111[4]	2	3 & 1	3	15	133.	B
Chem. 112[5]						B
Chem.230[4]	1 & 2	3 & 1	3	22	222.	AC
Chem. 250[4]	1 & 2	3 & 1	3	10	383.	AC
Chem. 230[4]	2 & 'S'	3 & 1	3	63	121.[6]	CS
Chem. 250[4]	2 & 'S'	3 & 1	3	17	104.[6]	CS
Ch. Ed. 111	2	3		1	2,176.	B
Ch. Ed. 213	2	3		3	725.	B
Ch. Ed. 221	1	3		1	2,176.	B
Ch. Ed. 230 & 33	2	3		5	435.	B
Ch. Ed. 240	1	3		4	551.	B
Ch. Ed. 241	2	3		4	551.	B
Ch. Ed. 250	1	3		1	2,206.	B
Ch. Ed. 251	2	3		1	2,206.	B
Ch. Ed. 264	2			6	367.	B
Com. Ser. 110	1	3		65	73.	B & E
Com. Ser. 111	2	3		58	73.	B & E
Com. Ser. 210	1	3		30	102.	B & E
Com. Ser. 211	2	3		30	102.	B & E
Drama 110[7]	2	2		9	105.	B & E
Drama 114	1	2		14	135.	B & E
Drama 114	2	2		6	158.	B & E
Drama 115	2	2		5	189.	B & E

[4] Work Load Analysis shows 6 hrs. per week lab. not shown in Calendar.

[5] Chem. 112 does not appear on the Work Load Analysis.

[6] Extra payment to Instructors for April-August increases cost amount not known.

[7] Does not appear in Calendar.

TABLE I (Continued)

Course	Semester	Number Hours Lecture & Seminars	Number Hours Lab.	Enrolment	Cost Per Student	Program
Econ. 110	1	3		149	48.	B
Econ. 111	2	3		117	61.	B
Econ. 200	1 & 2	3		38	156.	AC
Econ. 200	2 & 'S'	3		25	114.	AS
Econ. 210	1	3		3	516.	B
Econ. 211	2	3		4	387.	B
Eng. 110	1	1	2	18	73.	B
Eng. 111	2	1	2	19	70.	B
Eng. 210	1	2		12	110.	B
Eng. 211	2	3		10	136.	B
Eng. 252	1	2		12	102.	B
Eng. 253	2	3		10	136.	B
English						
110	1	3		351	30.	B
110	2	3		41	55.	B
111	1	3		24	46.	B
111	2	3		283	47.	B
210	1	3		178	62.	B
211	2	3		159	36.	B
212	1	3		16	64.	B
213	2	3		14	73.	B
214	1	3		5	207.	
215	2	3		4	253.	
220	1	3		7	128.	
231[8]	2	3		3	453.	
240	1 & 2	3		149	55.	
240	2 & 'S'	3		221	51.	
French 110[9]	1	3	2	8	160.	
French 111[9]	2	3	2	5	257.	
French 200[9]	1 & 2	3	2	16	78.	
French 200	2 & 'S'	3	1	26	50.	
French 210[9]	1	3	2	3	421.	
French 211[9]	2	3	2	33	421.	

[8] Taught by Engineering Department.

[9] More time shown for labs. than in Work Load Analysis.

TABLE I (Continued)

Course	Semester	Number Hours Lecture & Seminars	Number Hours Lab.	Enrolment	Cost Student	Programs
Geography						
110	1	3	2	45	95.	
110	2	3	2	4	168.	
111	2	3	2	15	230.	
112	2	3	2	17	71.	
210[10]	1	3		7	608.	
211[10]	2	3		8	456.	
220[10]	1	3		2	913.	
221[10]	2	3		2	913.	
201	1 & 2	3	2	27	158.	
201	2 & 'S'	3	2		124.	
Geology						
110	1	2	2	92	42.	
111	2	2	2	58	54.	
211	1	2	2	11	165.	
210	2	2	2	13	93.	
201	1 & 2	3	3	4	650.	
German 110	1	3	2	2	468.	
German 111	2	3	2	1	936.	
Gov. 112	1	3		16	62.	
Gov. 112	2	3		36	92.	
Hist. 110	1	3		55	43.	
Hist. 111	2	3		43	54.	
Hist. 112	1	3		115	40.	
Hist. 113	2	3		97	24.	
Hist. 120	1	3		11	82.	
Hist. 121	2	3		6	152.	
Hist. 205	1 & 2	3		54	85.	
Hist. 205	2 & 'S'	3		87	33.	
Hist. 210	1	3		13	82.	
Hist. 211	2	3		7	130.	

[10] Faculty work load analysis shows Geog. 210, 211, 220, 211, as 5 hour courses with 4 hours lecture and 1 hour lab.

TABLE I (Continued)

Course	Semester	Number hours Lecture & Seminars	Number Hours Lab.	Enrolment	Cost Per Student	Programs
Int. Design [11]						
110	1	1		54	18.	
111	2	1		37	37.	
112	1	2		7	27.	
113	2	2		31	25.	
114	1	6		38	80.	
115	2	6		25	121.	
116	1	2		35	15.	
118	1	3		55	20.	
119	2	3		25	39.	
210	1	3		18	43.	
211	2	3		16	48.	
212	1	2		20	8.	
213	2	2		16	10.	
214	1	6		20	37.	
215	2	6		16	69.	
216	1	2		19	8.	
217	2	2		16	10.	
218	1	3		20	36.	
219	2	3		16	45.	
220	1	3		21	53.	
221	2	3		17	24.	
222	1	1		20	9.	
223	2	1		16	16.	
Journalism						
110	1	3		25	73.	
111	2	3		20	91.	
210	1	3		3	303.	
211	2	3		8	113.	
220	1	3		11	82.	
221	2	3		9	101.	

[11] Faculty work load analysis shows most Interior Design Courses.

TABLE I (Continued)

Course	Semester	Number Hours Lecture & Seminars	Number Hours Lab.	Enrolment	Cost Per Student	Programs
Math 102	1	4 1/2		56	84.	
103	2	4 1/2				
107	1	2		11	156.	
105[12]	2	3		1		
112	1	3		48	41.	
113	2	3		33	58.	
120	1	5		17	84.	
121	2	5		17	84.	
111	1 & 2	2		8	142.	
211	1 & 2	3 & 2		28	132.	
239	1 & 2	3		10	120.	
212	1	5		12	149.	
211[6]	2 & 'S'	5		79	46.	
213	2	5		12	149.	
224[13]	2			15		
Nursing 111[14]	1	5	9	42	184.	
110	2	3	7	31	249.	
112	2	5	10	19	764.	
Philosophy						
110	1	3		11	106.	
111	2	3		24	43.	
210	1	3		5	312.	
211	2	3 & 1		13	120.	
241	1 & 2	3 & 1		15	203.	
241[6]	2 & 'S'	3 & 1		38	51.	

[6] Extra payment to Instructors for April-August increases cost amount not known.

[12] Shown as enrolling one student no cost available.

[13] Not shown in Calendar or Work Load Analysis

[14] High Cost per student probably result from 1st year operation. Program Starts January. Cost per Student hour is low.

BLE (Con ued)

Course	Semester	Number Hours Lecture & Seminars	Number Hours Lab.	Enrolment	Cost Per Student	Progra
Phys. Ed.						
100	1	2		72	20.	
102	2	2		46	51.	
103	2	3		37	115.	
104[15]	1 & 2	3	2	19	128.	
105	1	3		18	84.	
106	1	2		11	63.	
109[15]	2	3		47	38.	
109[15]	1	3		29	41.	
111	1	3		11	188.	
113	2	3		9	139.	
115	1	3		23	69.	
115[22]	2	3		46	81.	
121	1	2		23	69.	
124[16]	2					
125[17]	1					
125[17]	2					
126[18]	2					
134[19]	2			23	13.	
138	1	3		24	75.	
139	2	3		21	42.	
140	1	3		12	15.	
146[20]	2			35	14.	
221[21]	2					
230	1	3		8	100.	
231	2	3		13	15.	
207	1	3		19	47.	
205	1	3		15	60.	

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[15] P.E. 204 & 209 taught as P.E. 104-109

[16] Not Listed in Calendar of Faculty Workload Analysis.

[17] Not listed in Calendar

[18] Not listed in Calendar

[19] Not listed in Calendar

[20] Not listed in Calendar

[21] Not listed in Calendar, could be Recreation 221. High cost differential attributable to small sections including 2 of 1, 2 of 2, and 1 of 3.

TABLE I (Continued)

Course	Semester	Number Hours Lecture & Seminars	Number Hours Lab.	Enrolment	Cost Per Student	Program
Physics 215	2	3 & 1	3	11	155.	
Pol. Sc. 110			3	40	63.	
Pol. Sc. 111			3	32	93.	
Pol. Sc. 200	1 & 2		3	20	128.	
Pol. Sc. 210			3	5	168.	
Pol. Sc. 211			3	2	421.	
Psych. 110	2	3		90	20.	
Psych. 110	1	3		206	27.	
Psych. 111	2	3		172	35.	
Psych. 111	1	3		25	25.	
Psych. 202	1 & 2	3		91	47.	
Psych. 202	2 & 'S'	3		100	45.	
Psych. 210		3		67	18.	
Psych. 211	2	3		62	19.	
Psych. 215	1	3		32	30.	
Psych. 216	2	3		31	31.	
Psych. 220	1	3	3	7	154.	
Psych. 221	2	3		5	215.	
Radio 110	1	2		6	136.	
Radio 111	2	2		6	136.	
Recreation 110	1	3	2	51	46.	
111	2	3	2	47	50.	
130	1	3		13	91.	
131	2	3		15	79.	
210	1	3		29	24.	
211	2	3		22	32.	
220	1	3		18	48.	
221	2	3		10	86.	
240	1	2	3-5[23]	39	15.	
241	2	2	3-5[23]	35	17.	
231[22]						

[22] Probably the same as Phys. Ed. 231 - Included as Phys. Ed. 231

[23] 3 - 5 hours Internship

TABLE I (Continued)

Course	Semester	Number Hours Lecture & Seminars	Number Hours Lab.	Enrolments	Cost Per Student	Progra
Sociology						
110	1	3		241	28.	
110	2	3		49	22.	
111	2	3		164.	42.	
202	1 & 2	3		76	62.	
202	2 & 'S'	3		145	31.[24]	
210	1	3		53	42.	
211	2	3		93	24.	
212	1	3		27	81.	
213	2	3		66	45.	
Speech						
110	1	2		176	21.	
111	2	2		133	28.	

[24] Additional payment for May - August not known.

TABLE II

ESTIMATES OF PER STUDENT COSTS OF TEACHING HIGH SCHOOL COURSES [1] IN MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Course	Enrolment	Cost per Student
English 30	128	$ 113
English 33	46	43
French 30	294	90
Biology 30	85	52
Social Studies 30	69	108
Chemistry 30	220	96
Mathematics 30	132	121
Mathematics 31	49	145
German 30	27	138
Physics 30	68	130
Average per student cost of teaching High School Courses		$ 103

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1. High School Courses taught as part of Junior College Programs.

considerable time to laboratory work, no laboratory work was in fact required by the calendar description. This was particularly true in the cases of Geography 210 and 211 which are classified in the calendar as being three hours per week lecture, three credit courses, but which are shown in the faculty work load analysis as three hours lecture plus three hours per week laboratory. The somewhat high per student cost of instructing these courses is partly the result of this factor and partly the result of the small enrolment per class. The same observation was made in the case of courses taught in Interior Design. However, in these courses, the total amount of time specified in the faculty work load analysis coincided with the total amount of time as required by the calendar. Some difficulty was experienced in computing the cost per student per course of courses offered in Physical Education, since a number of courses which appeared on the faculty work load analysis and registration lists did not appear in the calendar. However, since the number of students enrolled in these courses was small it was assumed that they were taught under a different course description.

It was observed that some courses appeared to have an excessively high cost per student for instruction. The most obvious cause of these high costs is the relatively low course enrolments. Courses in Christian Education provide the best example of high cost due to low enrolments. The cost per student, per semester, in some courses offered by the Christian Education Department is as high as $ 2,206.00. It should be noted, however, that high course costs because of low enrolments are not restricted to the Christian Education Department and, in fact, may be found in courses offered by each department, particularly by departments offering courses in the "B" program. Thus, enrolments in German 110 and 111 are two and one respectively. Further examples are to be found in English courses,

French courses, History courses and Economics courses. A second reason for an apparently high cost per student has already been touched upon. Courses involving laboratory work are to be expected to be higher than those that do not involve laboratory work. In fact, where the course requirements are for three hours per week lecture and for three hours per week laboratory work, it is to be expected that the cost per student may be twice as high as the cost per student in a course requiring only three hours per week lecture, provided that enrolments are the same in both courses and that laboratory work is not supervised by specially appointed laboratory assistants whose rate of salary is less than that of the instructor.

It would also be appropriate at this time to comment on the high student cost of instruction in high school courses. Estimates of course costs were based on a faculty work load of twelve hours per week. In the faculty work load analysis, high school courses are shown as requiring six hours per week per semester in instructional time. Thus, compared with a junior college course requiring three hours per week instruction each semester, the high school course could cost twice as much to teach as the junior college course offered for one semester or a junior college course offered for three hours per week for both semesters. To some extent this high cost per course of instruction of high school subjects could be offset by relatively large enrolments, but current trends in enrolment in high school courses suggest that this factor should not be relied upon to correct what might be the result of an unrealistic weighting of teaching load.

2. Indirect Costs of Instruction

As previously pointed out, overhead costs associated with instruction include the academic Vice-President's office, the academic stenographic pool, duplicating and stationery services, plant operation and maintenance chargeable to instruction, the new program development, the release time of administrators, laboratory expenditures, travel expenditures and sundry expenditures associated with teaching of programs.

Before preparing estimates of indirect instructional costs it was necessary to undertake an analysis of expenditures made for plant operation and maintenance.

Plant Operation and Maintenance Charges. Plant operation and maintenance charges include expenditures made for utilities, caretaking supplies, and labor and maintenance. Although expenditures on plant operation and maintenance are subdivided by function in the annual budget statement for 1967, no breakdowns of actual expenditure were readily available from accounting records. Accordingly an analysis of plant operations and maintenance expenditure was undertaken in order to charge to appropriate proportions of costs of plant operation and maintenance to instruction and college administration. The analysis was prepared on the basis of the 1967 budget statement and discussions with Mr. Armour of the Mount Royal Junior College Business Office.

The total actual and estimated expenditures on plant operations and maintenance as taken from the statements of revenue and expenditure in Appendix A are:

Utilities	$ 20,443.00
Caretaking	39,998.00
Maintenance	60,671.00
Total	$121,112.00

The 1967 budget distribution of plant operation and maintenance expenditures were:

	Administration	Instruction	Residences
Caretaking	20%	80%	Charged to residences
Utilities	7%	60%	33%
Maintenance	3%	81%	16%

The percentage breakdown above was applied to the data on the total actual and estimated costs of plant operation and maintenance as derived from the annual statements of expenditure to result in the breakdown shown in Table III.

Administrative Release Time. Data on the cost of release time for administration of departmental heads was based on the faculty work load analysis used to determine teaching costs per course and was computed on the basis of the twelve hours per week teaching load. Table IV provides the estimates of the cost of administrative release time.

With the exception of release time for the heads of the Department of Nursing and Christian Education, the release time for administration amounts to between three and six hours a week of teaching time per Department. It may be pointed out that some $24,000.00 of the $51,000.00 for release time of administration was attributable to the heads of departments of Nursing Education and Christian Education. Neither of these department heads is allocated any formal teaching duties according to the faculty work load analysis. It may also be noted that a high proportion of release time is to be expected in the case of Nursing Education where the program is in its first year.

Further examination of the work load analysis suggests that the distribution of release time for administration is uneven. Some Department heads carry a full twelve hours a week teaching load in addition to their administrative

TABLE III

DETAILS OF EXPENDITURES ON PLANT OPERATION AND MAINTENANCE

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

	Administration	Instruction	Residences
Caretaking	8,000	31,998	
Utilities	1,431	12,266	6,748
Maintenance	1,820	49,144	9,707
Totals	11,251	93,408	16,456

TABLE IV

COST OF RELEASE TIME FOR DEPARTMENTAL ADMINISTRATION

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Department	Total Cost
Nursing	$ 11,530
History	2,812
Economics	2,568
Speech & Radio	1,636
Interior Design	3,700
English	2,570
Business Administration	3,790
Christian Education	12,600
Psychology	1,075
Mathematics	2,394
Social Studies	2,250
Physical Education	1,295
French	3,000
Total	$ 51,220

duties and in one case, Community Service, the teaching load is greater than twelve hours per week. In other cases the full twelve hour teaching load includes high school courses. Such courses are normally weighted as six hours per week for one semester, and university level courses are usually weighted at three hours for each of two semesters. It is suggested that the allocation of release time might be the subject of institutional consideration.

Per Student Indirect Cost of Instruction. Plant operation and maintenance costs for instructional areas together with the total computed release time for administration were added to the other indirect costs of instruction to provide the following estimates:

Duplicating and Stationery (Statements of expenditure and revenue)	$ 17,135
Academic Vice-President's office and Academic Stenographic Pool (Statements of expenditure and revenue)	40,204
Scholarships (Statements of expenditure and revenue)	18,989
Plant operation and Maintenance (See previous section)	93,408
New Program development (Statements of expenditure and revenue)	24,960
Release time of administrators (Faculty work load analysis)	51,220
Library expenses, travel expenses, Sundry expenses associated with instruction, (Departmental accounts)	12,783
Total	$ 258,699

It should be noted that the total figure of $ 258,699 included the indirect costs of instruction of excluded programs. On the other hand it may be pointed out that the major components of indirect instructional cost, plant operation and maintenance, release time of administrators and academic Vice-President's office may be more closely identified with the programs under study than with the excluded programs.

On the basis of full time enrolment of 1,101 students, the cost per student on indirect cost associated with instruction is $ 234.00.

3. Cost of Supporting Services

Supporting services are identified as library services, counselling services and health services. Each service is discussed in turn and an estimate of the per student cost associated with the provision of each service is provided at the conclusion of the section.

Library Services. The estimates for the costs of operating library services were prepared on the basis of data submitted by Mr. J. A. Brown, Librarian of Mount Royal Junior College. The total actual estimated expenditures for library services for the year amounted to $ 34,488.00. This total was made up the following way:

Salaries of librarians and assistants	$ 21,980
Purchases of books and periodicals	8,380
Purchases of audio-visual aids and supplies	2,740
Purchases of miscellaneous library supplies	1,388
	$ 34,488

Of the actual and estimated expenditures on books and periodicals of $8,380, approximately $6,108 was recovered under capital and grants. For the year, total purchases of books to the amount of $12,743 were authorized of which $9,972 was authorized as capital expenditures and $2,699 was authorized to be charged against operational expenditures. The difference between the authorized and actual expenditures is a function of delay in receiving orders.

Analysis showed that there is more utilization of library services by students in University transfer programs than by students in other programs. The Librarian reports the following breakdown of book purchases:

High school	$ 823.00	6.6%
Transfer courses (A,B,C,S)	5,247.00	41.3%
Careers (E)	4,710.00	37.3%
Others	1,891.00	14.8%
Totals	$ 12,671.00	100.0%

The Librarian estimates that the utilization time of Librarians and assistants follows a similar pattern and so this breakdown was used as a basis of prorating library expenditures by program.

Data was not available to break down library expenditure further between A and B programs of the University transfer courses and so library costs for University transfer programs were divided on a fifty-fifty basis on the grounds that many reference books were used on both programs. The estimated costs per student, allocated by program, are set out in Table V.

TABLE V

ESTIMATED COSTS PER STUDENT BY PROGRAM OF LIBRARY SERVICES

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

	Programs A, C, S.	Program B	Program E	Others	Totals
Salaries	$ 4,529	$ 4,529	$ 8,177	$ 4,745	$ 21,980
Books	1,734	1,734	3,117	1,795	8,380
Audio-visual aids	564	564	1,019	593	2,740
Miscellaneous	285	285	516	302	1,388
	7,112	7,112	12,829	7,435	34,488
Costs per student [1]	$ 19	$ 14	$ 64		

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[1] Totals divided by Enrolment Data Appendix B.

Counselling Services. Estimates of the cost of providing counselling services were prepared on the basis of data submitted by Mr. K. Fuller, Director of Counselling Services.

Total expenditures, estimated and actual, of providing counselling services for the academic year were $43,847 of which all but a fractional proportion were for personal services. It was originally hypothesized that the services provided by the counselling centre would not be distributed evenly throughout the student population. A lengthy analysis undertaken by the director of counselling services showed the following distribution of counselling time:

Program	Number of Students Receiving Service	Average time Per Session	Total Time Per Program	Percentage Total Time
A	50	½ Hour	25 Hours	1.7%
B	297	1 Hour	297 Hours	20.5%
C	164	½ Hour	82 Hours	5.6%
D	600	1¼ Hours	750 Hours	51.6%
E	62	2 Hours	124 Hours	8.5%
S	52	½ Hour	26 Hours	1.8%
Non-students	300	½ Hour	150 Hours	10.3%

For comparative purposes the distribution may be compared with the distribution of the percentage of students in attendance:

Program	Actual Percentage of Counselling time	Percentage of Students Enrolled
A, C, S.	9.1%	18.2%
B	20.5%	32.5%
D	51.6%	33.3%
E	8.5%	16.0%
Non-students	10.3%	-

One of the more interesting aspects of the breakdown of counselling time is a relatively high proportion of counselling time spent with non-students. It appears that this time is spent primarily with local residents making enquires as to their eligibility for one or another of the programs and that such expenditure could well be charged against the information account.

Another interesting aspect of the Table is a relatively high proportion of time spent with students in the D program. Since these students often enter college without the necessary prerequisites to follow courses of study offered in the University of Calgary or the Institutes of Technology, it is not surprising that they require additional guidance assistance; therefore, it is suggested that as the policy of "open-door" admission is extended, the amount of available guidance time be increased proportionally.

The total actual and estimated expenditures on counselling services were prorated by the percentage of utilization to provide an estimate of the total cost per program of counselling services and the total cost per program was divided by the number of students enrolled in the program to provide the estimate of per student cost by program of counselling services shown in Table VI.

TABLE VI

ESTIMATED COST PER STUDENT BY PROGRAM OF COUNSELLING SERVICES

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Program	Total Cost	Per Student Cost [1]
A, C, S.	$ 4,428.00	$ 12.00
B	9,953.00	19.00
E	4,165.00	21.00

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[1] Appendix B.

Health Services. The college provides health service for all students. The staff consists of a Doctor and Nurse. The total actual and estimated expenditures in the academic year 1967-1968 were $16,000 of which $15,000 was for salaries and $1,000 for supplies. In order to derive the per student cost of health service, it was necessary to analyze the proportion of time spent by the Doctor with students in each program. This analysis was performed on the basis of a sample study for the months of November and March. It was pointed out by the Doctor that these are the peak months for health service and so analysis was based on the number of consultations for these months. The number of consultations with students from each program was estimated to be :

Program	Number of Consultations	Percentage
A	123	21%
B	306	52%
C	4	1%
D	75	13%
E	80	13%

This estimate has been used as a basis of allocating the per student cost. It is perhaps of significance that the Doctor reports that a considerable number of students utilizing the health service (31%), are students living in residence, although the proportion of students living in residence is relatively small.

Table VII provides an estimate of the per student cost per program of Health Services. The percentage breakdown above was used to prorate the total cost of health services to provide a total cost per program of health services and this total was divided by the program enrolment to provide a cost per student figure.

TABLE VII

ESTIMATED COST PER STUDENT BY PROGRAM OF HEALTH SERVICES

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Program	Total Cost	Per Student Cost [1]
A, C, S.	$ 3,520	$ 9.00
B	8,320	16.00
E	2.080	10.00

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[1] Total cost divided by enrolment in Appendix B.

It should be noted that the cost of providing health services is not borne entirely by the college since the doctor in charge deals directly with the carriers of medical insurance, where such insurance is carried by students for some 20% of each fee per consultation.

A summary of the total cost of supporting services is provided in Table VIII.

A summary of per student cost for supporting services is provided in Table IX.

TABLE VIII

TOTAL COSTS FOR SUPPORTING SERVICES

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Program	Library	Counselling	Health	Total
A, C, S.	$ 7,112	$ 4,428	$ 3,520	$ 15,060
B	7,112	9,953	8,320	25,385
E	12,829	4,165	2,080	19,074

TABLE IX

PER STUDENT COST BY PROGRAM OF SUPPORTING SERVICES

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Program	Enrolment	Total Expenditure	Cost Per Student
A, C, S.	384	$ 15,060.00	$ 39.00
B	516	25,385.00	49.00
E	201	19,074.00	95.00

General Comments on Supporting Services. It is suggested that the practice of supplying books on the capital grant basis be continued for some time and that consideration be given to extending the use of capital grant for the purchase of bound copies of periodical literature.

The wide variety of programs offered at Mount Royal College suggests that the provision of a greater quantity of counselling service per student than in an institution offering less variety is justified. It is suggested that some institutional attention be given to the problem of identifying the service needs of students.

While some doubts may be raised ordinarily by the necessity of providing complete health services at a junior college level, it should be borne in mind that Mount Royal Junior College enrols a fairly high proportion of students not normally residents of Calgary. The provision of adequate health services, therefore, should be considered an important part of the total program.

Overhead Costs Associated with College Administration

Overhead costs associated with college administration include expenditures made for the President's Office, Business Office, Registrar's Office, information office, pensions and fringe benefits of non-academic personnel, student affairs, research and development as distinct from new program devlopment, contributions to capital, plant operations and maintenance of administration areas, telephones and postage, other expenditures including athletic subsidies and a net loss on college enterprises. Costs of these overheads with the exception of the net loss on the operation of college enterprises have been derived from the annual statements of revenue and expenditure provided in Appendix A. Data for the net loss on the operation of the college enterprises were ascertained separately

Net Loss on Operation of College Enterprises. College enterprises include the college residences, dining rooms, book store and snack bar. In general, it may be said that college residences and dining rooms operate at a net loss and book stores and snack bars show some operating profit. Table X sets out the details of the operations of these enterprises. The total loss on the operation of these enterprises should undoubtedly be larger than the figures above suggest, since utility and maintenance costs are not charged to residences, but to a general utilities account. Furthermore, the accounting and general business situtation of these enterprises are the responsibility of the business office and thus some proportion of the cost of operating the business office would be charged to this enterprise. It has been pointed out above that the plant operation and maintenance costs chargeable to residences amount to some $ 16,000.00 [1]. The cost of plant operation and maintenance and administration of the enterprises would serve to increase the deficit still further and a conservative estimate might place the total deficit at $ 32,000.00 [2]. This deficit amounts to some $ 20.00 per student and, in fact, it represents a subsidy to a specific group of students, those who live in the residence of the college.

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[1] See Table III - p. 29

[2] It may be possible that the large deficit shown for 1967-1968 is atypical. In the fall of that year a board decision to close down parts of the residence rather than incur heavy expenditures for maintenance and rental resulted in a revenue loss of some $ 30,000 but without appreciable reduction in overhead expenditures on caretaking, etc.

TABLE X

REVENUE AND EXPENDITURE OF COLLEGE ENTERPRISES

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Enterprise	Revenue	Expenditure	Profit or Loss
Residence	$ 50,122	$ 71,854	$ - 21,732
Dining Room	70,188	74,816	- 4,628
Book Store	77,310	72,560	+ 4,750
Snack Bar	33,243 [1]	26,037 [1]	+ 7,206

[1] Estimated revenue and expenditure falls off 50% between April and August.

Overhead Costs. Expenditures shown in the table of expenditure and revenue of Appendix A are total and as such include a proportion of administrative cost attributable to extension courses, music conservatory and the operation of college enterprises discussed above.

On the basis of discussion with personnel in the business offices, it was estimated that 10% of activities of the business office and the Registrar's office were devoted to the activities numerated above and that some 2% of the time of the President's office were so taken up. Since the study is concerned with costing only those overheads attributable to programs which are supported by grants, the estimates of cost have been adjusted accordingly. Table XI provides estimates of the adjusted total costs of college overheads.

Summary of Non-Instructional Costs Per Student. Table XII provides a summary of the indirect costs of instruction, cost of supporting services and overhead costs per student as developed in previous sections.

TABLE XI

TOTAL ADJUSTED COSTS OF COLLEGE ADMINISTRATION

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Activity	Total Cost	Percentage (Approx.)
President's office [1]	$ 77,079	21
Business office	46,015	12
Registrar's office	39,797	11
Information office	46,182	12
Pensions and fringe benefits	16,995	5
Student affairs	14,531	4
Research and development	18,036	5
Contributions to capital	16,565	4
Plant operation and maintenance	11,251	3
Other expenditures including athletic subsidies	30,582	8
Telephone and postage	21,644	6
Net loss on operation of college enterprises	32,000	9
Total cost of college administration overheads	$ 370,677	
Cost per student	$ 366.00	

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[1] Expenditures for the President's Office in this year include payments made to the previous president and the costs incurred in the hiring of a new president.

TABLE XII

SUMMARY OF NON-INSTRUCTIONAL COSTS PER STUDENT BY PROGRAM

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Program	Indirect Instruction [1]	Supporting Services [2]	College Administration Overhead [3]	Total
A, C, S.	$ 234	$ 39	$ 336	$ 609
B	234	49	336	619
F	234	95	336	665

[1] P. 31.
[2] Table IX
[3] Table XI

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	

[illegible]

[illegible]

[illegible]

V. STAGE 3

COST REVENUE ANALYSIS

The final stage of the study consisted of the preparation of estimates of the cost per student year of specified programs, and to compare these estimates with the revenues available to Mount Royal Junior College.

The estimates of cost per student year were prepared in three steps:

Per Student Cost of Options

The first step consisted of rearranging the data for the instructional cost per student per course as set out in Table I into groups corresponding to the summaries of programs provided in the Mount Royal Junior College Calendar. The purpose of this step was to provide an average cost for groups of courses which may be considered options. The details of this rearrangement are set out in Appendix C and a summary of the average instructional cost for each group of courses is presented in Table XIII.

Table XIII shows that the instructional cost per student for laboratory courses offered in the "A" Program is twice that of courses in the Humanities, Social Sciences and Arts. This difference will be reflected in later estimates of program costs for students being prepared for the first year of the B. A. at the University of Calgary and for the B. Sc. at the same institution.

It is interesting to note that the cost differential is not so marked in "B" Programs, where courses in Group III (the Humanities) and Group I (the Social Sciences) cost much more than do laboratory courses. To a large extent, the relatively high cost per course in the Humanities is a function of the number of courses with small enrolments, including two courses in French, each of which cost $421 per student, two courses in German, one of which costs $468 per student, and

TABLE XIII

SUMMARY OF INSTRUCTIONAL COST PER STUDENT

FOR GROUPS OF COURSES OFFERED AT MOUNT ROYAL JUNIOR COLLEGE

1967-1968 [1]

Program	Group	Average Cost of Instruction Per Student
A, C, S (University of Calgary)	I (Humanities, Social Sciences Arts)	$ 86
	II (Laboratory Sciences)	$ 173 [2]
	III (Physical Education)	$ 66
B (Four Year University Program Transfer)	I (Natural Sciences)	$ 110
	II (Social Sciences)	$ 172
	III (Humanities)	$ 201
	IV (Physical Education)	$ 80
	V (Other Courses)	$ 74 or $ 365 [3]
E		

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[1] From Appendix C.

[2] Excludes Instructional Cost of Geol.201 which enrols only four students.

[3] Alternative costs dependent on whether courses in Christian Education are included or excluded.

[4] E program courses are specific and may be costed directly from Table I. Where options are provided for they are selected from 'B' Program.

the other, $936 per student. The instructional costs for Program "B" Group V, other courses, illustrate the difference that the inclusion of high cost courses can have on the estimates of average cost. However, it was not considered necessary to provide the same alternative cost for the "B" Program Group III courses, since nine of the twenty-four courses offered cost more than $ 200 per course and eleven of the twenty-four cost more than $ 130. No such distribution of the course cost was attempted for E programs. E programs courses are divided into two groups: general studies and professional courses. The course registratio list supplied by the Registrar's office did not show registrations in courses listed under general studies including Natural Science 100, Natural Science 101, Political Economy 102, Political Economy 103, Social Science 104, Social Science 105, Literary Arts 106, Literary Arts 107. In the absence of such data, it was assumed that the requirements for these courses would be met by students taking first year courses in the B program in sections specially selected. Estimates of program costs of students in E programs were prepared by direct reference to Table I. It was not considered necessary to cost the individual courses in the Secretarial Science program on the grounds that, since no specific requirements for this program are listed in the calendar, it would not be possible to provide estimates of the cost of the program. Accordingly, an estimate of course costs was provided by dividing the total salary paid instructors in the Secretarial Science program by the number of students registered in that program for whom grants were paid. To this figure should be added some cost reflecting courses in English, Social Sciences or options taken beyond the Basic Secretarial Science Program.

Per Student Cost of Specified Programs

The second step in this analysis was the preparation of estimates of instructional cost per student year for specific programs.

The Mount Royal Junior College Calendar for 1967 provides details of the course requirements for each program offered at the College. Using the per student course costs as set out in Table I and the average per student course costs for groups of options as set out in Table XIII it was possible to determine the total instructional cost per student for a wide variety of programs within the A, B, C, S, and E categories.

The details of these calculations are set out in Appendix D, and the total instructional costs per student have been transferred to Table XIV, Column 4.

The third step was to add to the instructional cost per student, the indirect costs of instruction, the costs of supporting services and the costs of overheads summarized in Table XII. These costs have been transferred to Column 5 of Table XIV. The total cost per student per year for specified programs in A, B, C, S, and E are set out in Column 6 of Table XIV.

It is worth noting that the estimated average cost per student year of $1,438 compares favourably with the average cost per full-time student estimated by Farquar for the previous year 1966-1967 at $1,319.[1]

Although there is a difference of almost 8% in the two estimates it should be pointed out that the figure of $1,438 is influenced unduly by the existence of three high cost programs: the first and second year of the B.Sc. in the "B" Program and the second year of the engineering in the "B" Program. It can be seen that without these three high cost items, the average cost per student year would be considerably less. However, caution

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[1] Farquar, Hugh E, "The Role of the College in the System of Higher Education in Alberta", Unpublished Ph.D. Thesis, Edmonton University of Alberta 1967 p.116.

TABLE XIV-

ESTIMATED TOTAL COSTS PER STUDENT PER YEAR OF SPECIFIED PROGRAMS AT MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Program (1)	Description (2)	Year and Program (3)	Instructional Cost (4)	Other Costs (5)	Total (6)
A	B.A.	1st	484	609	1093 [1]
A	B.Sc.	1st	658	609	1267 [1]
A	B.Comm.	1st	419	609	1028
A	B.Ed.	1st	317	609	926
A	B.C. (H.Economics)	1st	606	609	1215
A	B.Sc.(Agriculture or Veterinary)	1st	667	609	1276
A	Pre Med.	1st	705	609	1314
B	B.A.	1st	1116	619	1735 [1]
B	B.Sc.	1st	1488	619	2107 [1]
B	B.A.	2nd	978	619	1597 [1]
B	B.Sc.	2nd	1474	619	2093 [1]
B	B.A. (Social Science)	1st	643	619	1262
B	B.A. (Social Science)	2nd	909	619	1528
B	Bus. Admin.	1st	768	619	1387
B	Bus. Admin.	2nd	609	619	1228
B	Engineering	1st	1027	619	1646
B	Engineering	2nd	1711	619	2330 [2]
E	Interior Design	1st	733	665	1398
E	Journalism	1st	672	665	1337
E	Nursing	1st	726	665	1391
E	Secretarial	1st	381	665	1046
Average			$ 814		$ 1438

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[1] Computed on the assumption that B.A. students will select options in the Humanities and Social Sciences and that B.Sc. students will select options in the Natural and Physical Sciences.

[2] The high instructional cost of second year Engineering is a function of the high cost of English 231.

should be exercised in the interpretation of this average figure, since these data refer only to specific programs and do not cover the whole range of offerings at Mount Royal Junior College.

It might also be noted that with the exception of the first and second years of the B.Sc. "B" Program and the second year of the Engineering "B" Program, each of which have a per student cost of almost fifty percent more than the average, the costs of programs are within some fifteen percent of the average.

The cost figures would appear to suggest that there is little reason to assume the "E" or Terminal-Vocational Programs are any less expensive to operate than are the more traditional University Transfer Programs. In fact, programs designed for transfer to the second year of the University of Calgary (A, C, and S) are almost without exception less expensive than "B" or "E" programs.

It is possible that "B" programs are more expensive than University of Calgary Programs because of the wide variety of offerings permitted students in the selection of options. This wide variety of offerings would appear to be the basic reason for the low enrolment, high cost courses typical of the "B" Program.

The high proportion of the non-instructional cost component is significant, but it should be recalled that the analysis reported here has included the cost of release time for Departmental Administration as an overhead, a cost normally charged to Instruction.

Cost-Revenue Comparisons

The development of the program costs per student year made it possible to draw up a summary of the cost-revenue picture for each of the specified programs costed.

This comparison is provided in Table XV. The data in columns 1, 2, 3 and 4 have been transferred from Table XIV. The data in column 5 represent the per student grant received from the Department of Education and the data in column 6 represent the per student fee for the programs. Column 7 shows the subsidy effect or deficit on the operation of the program.

Table XV shows that all the University of Calgary transfer programs provide a subsidy effect, whereas all other University transfer programs operate at a deficit. Terminal or Vocational "E" Programs also operate at a deficit but it should be pointed out that these programs receive $ 120 less grant per student year than do the other programs.

The significance of the net subsidy effect is difficult to determine without more details of individual student registration by program but it would appear obvious that if a program is expensive because of low enrolments it will be easy to overlook since the greater number of students (and presumably low cost programs) will provide the subsidy necessary to bring about a balance. Thus, if the ratio of students taking the B. Ed. University of Calgary program to students taking the "B" Engineering programs is 3:1, a balance will be achieved. Similarly, one student registered in the University of Calgary B. Comm. first year will provide the subsidy effect necessary for some five students registered in the first year of Business Administration of the "B" University Transfer Program.

The problems of high cost arising out of low enrolments, particularly in "B" Programs, have been referred to constantly and it is suggested that the need

TABLE XV

COST REVENUE ANALYSIS

FOR SPECIFIED PROGRAMS AT MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Program (1)	Description (2)	Year (3)	Cost (4)	Grant (5)	Fees (6)	Net Subsidy or Deficit (7)
A	B.A.	1st	1093	1050	300	+ 257
A	B.Sc.	1st	1267	1050	300	+ 83
A	B.Comm.	1st	1028	1050	300	+ 322
A	B.Ed.	1st	926	1050	300	+ 424
A	B.C. (H.Economics)	1st	1215	1050	300	+ 135
A	B.Sc.(Agriculture or Veterinary)	1st	1276	1050	300	+ 74
A	Pre Med.	1st	1314	1050	300	+ 36
B	B.A.	1st	1735	1050	300	- 385
B	B.Sc.	1st	2107	1050	300	- 757
B	B.A.	2nd	1597	1050	300	- 247
B	B.Sc.	2nd	2093	1050	300	- 743
B	B.A. (Social Science)	1st	1262	1050	300	+ 88
B	B.A. (Social Science)	2nd	1528	1050	300	- 178
B	Business Admin.	1st	1387	1050	300	- 37
B	Business Admin.	2nd	1228	1050	300	+ 122
B	Engineering	1st	1646	1050	300	- 296
B	Engineering	2nd	2330	1050	300	- 980
E	Interior Design	1st	1398	920	300	- 178
E	Journalism	1st	1337	920	300	- 117
E	Nursing	1st	1391	920	300	- 171
E	Secretarial	1st	1046	920	300	+ 174

for subsidy in the "B" Program is one specific outcome of the wide variety of courses with low enrolments.

In general, Provincial Grants account for well over eighty percent of the costs of operating "A" Programs, between fifty and sixty percent of the costs of operating "B" Programs, and eighty percent of the cost of operating "E" Programs.

VI CONCLUSIONS AND RECOMMENDATIONS

It was noted in the introduction to this study that its purpose was to explore the relationship between the level of support provided under the present system of operating grants, and the cost of operating the types of day program for which grants were payable. It was also pointed out that the study was designed more to draw attention to specific questions which might need further investigation rather than to provide definite recommendations. The following conclusions and recommendations should be considered in the light of these purposes.

Conclusions

This analysis has shown that some eighty percent of the operating costs of "A, C, S and E" Programs were covered by the existing level of provincial grants, and that some fifty to sixty percent of the cost of operating "B" Programs were covered by grants.

The analysis also showed that the costs of operating "A, C, S and E" Programs were similar, and the "B" Programs cost more than other programs. It was suggested that a number of factors could account for the inflated costs of "B" Programs, among the more important of which were the wide variety of courses offered and associated low enrolments, and the introduction of laboratory sessions into courses where no laboratory sessions were called for in the Calendar.

The type of analysis used in this study would appear to provide more specific data for decision-making than a more straightforward type of cost analysis using the present system of accounting.

Recommendations

On the basis of the above conclusions and on the basis of observations made elsewhere in this report it is recommended that further study be made of the following areas:

1) The cost effectiveness of providing additional hours of instruction beyond that required by the calendar, where such hours are to be scheduled as part of an instructor's work load.

2) The problems of financing residences, and the relationship between residences and health services.

3) The possibility of instituting some common system of accounting by all junior colleges which would facilitate a continuing series of cost analyses. It is suggested that the use of a performance budgeting approach would provide a more flexible approach to the financing of junior college operations than the present per student grant approach.

4) The problems of optimal and minimal course enrolments and the development of core curricula with limited numbers of options.

5) The possibility of much greater use of sessional instructors in courses with low enrolment, and laboratory assistants to offset the high costs of low enrolment courses.

6) The problems of weighting junior college courses and high school courses for faculty work load purposes.

7) The desirability of setting standards for library services and for financing these standards through the continued use of capital grants.

It is also possible to make some specific suggestions on the basis of the findings of the study:

1) In view of the lack of cost differential between University Transfer Programs

and Terminal or Vocational Programs, it is suggested that the level of support for Terminal or Vocational Programs be raised to the same level as the University Transfer Programs.

2) It is suggested that although some upward revision of the per student grant figure would be indicated in the future, it would appear at the present time that economies in operation could be made to offset the increases in salaries and operating costs which may be expected in the immediate future.

3) It is suggested that junior colleges be encouraged to conduct thorough institutional analyses over the whole range of their activities.

APPENDIX A

STATEMENT OF REVENUE & EXPENDITURE

MOUNT ROYAL JUNIOR COLLEGE

1967-1968

Overheads

Duplicating & Stationery	$ 17,135
Academic Stenography	
(Academic Personnel	78,652
(President's Office [1]	
Academic Vice-Principal	40,204
Business Office	51,127
Registrar's Office	44,218
Counselling	43,847
Library	34,488
Health	16,000
Scholarships	18,589
Information	46,182
Utilities	20,443
Telephone & Postage	21,644
Insurance	2,323
Rented	7,635
(Other expenditures including	30,582
(Athletic Subsidy	
Teachers Grants	
Pensions & Fringe Benefits	31,616
Maintenance	39,998
Caretaking	60,671
New Program	24,960
Students Affairs	14,531
R & D	18,036
Contribution to Capital	16,565

Abstracted from records of the Business Office, Mount Royal Junior College.

1. There was a change in Account Classification.

Course Registrations Fall & Spring Semester

Mount Royal Junior College

1967-1968

A & C
FALL 1967

BIOL	200	A	16
"	200	B	22
BUSN	201	A	18
CHEM	230	A	22
"	250	A	10
ECON	200	A	32
"	200	B	6
ENGL	240	B	43
"	240	C	46
"	240	F	28
"	240	G	32
FREN	200	A	16
GEOG	201	A	27
GEOL	201	A	4
HIST	205	A	22
"	205	B	32
MATH	111		8
"	211	A	18
"	211	B	10
"	239	A	10
PHED	204		11
"	209		14
PHIL	241	A	15
PLSC	200	A	20
PSYC	202	A	41
"	202	C	50
SLGY	202	A	76

B & E

FALL 1967

ACCT	100	A	7
BIOL	110	A	32
"	110	B	42
"	110	C	31
"	110	D	30
"	110	E	24
"	110	F	27
"	114	A	24
BUSN	100	A	7
"	110	A	17
"	110	B	20
"	110	C	37
"	110	D	17
"	111		4
"	222	A	28
"	222	B	42
"	236	A	28
"	236	B	23
CHEM	110	A	4
"	110	B	20
"	112	A	1
CMSV	110	A	13
"	110	B	12
"	110	C	11
"	110	D	13
"	110	E	10
"	110	F	6
"	210	A	10
CMSV	210	C	10
CRED	221	A	1
"	240	A	4
"	250	A	1
DRMA	114	A	7
"	114	C	7
ECON	110	A	40
"	110	D	38
"	110	F	25
"	110	G	22
"	110	H	17
"	110	I	4
"	210	A	3
ENGL	110	A	31
"	110	B	41
"	110	C	23
"	110	D	27
"	110	E	10
"	110	F	48
"	110	G	42
"	110	H	33
"	110	I	31
"	110	J	38
"	110	K	27
"	111	A	24
"	210	A	30
"	210	B	31
"	210	C	53

ENGL	210	E	27
"	212	A	16
"	214	A	5
"	220	A	7
ENGN	210	A	18
"	120	A	12
"	252	A	12
FREN	110	A	8
"	210	A	3
GEOG	110	A	28
"	110	E	17
"	210	A	7
"	220	A	2
GEOL	110	A	17
"	110	B	25
"	110	C	50
"	210	A	13
GERM	110	A	2
GOUT	112	A	16
HIST	110	A	19
"	110	B	36
"	112	A	52
"	112	B	24
"	112	D	23
"	112	E	16
"	120	A	11
"	205	A	22
"	210	A	11
INDS	110	A	21
INDS	110	B	15
INDS	110	C	18
"	112	A	19
"	112	B	18
"	114	A	20
"	114	B	18
"	116	A	18
"	116	B	17
"	118	A	27
"	118	B	28
"	210	A	18
"	212	A	20
"	214	A	20
"	216	A	19
"	218	A	20
"	220	A	21
"	222	A	20
JRNL	110	A	13
"	110	B	12
"	210	A	3
"	220	A	11
MATH	020	A	16
"	020	B	5
"	020	C	22
"	102	A	26
"	102	B	17
"	102	C	13
"	107	A	11
"	120	A	17

MATH	112	A	25
"	112	B	23
"	212	A	12
NURS	111		20
"	111	A	22
PHED	100	A	22
"	100	B	31
"	100	C	11
	100	D	18
"	104	A	9
"	104	B	20
"	105	A	11
"	105	B	18
"	106	A	4
"	106	B	7
"	109	A	15
"	109	B	14
"	111	M	7
"	111	W	4
"	115	A	13
"	115	B	10
"	121	A	11
"	121	B	13
"	125	A	6
"	138	A	20
"	138	B	4
"	140	A	12
"	204	A	11
"	205	A	19
PHED	207	A	15
"	230	B	8
PHIL	110	A	11
"	210	A	5
PSYC	110	A	38
"	110	C	34
"	110	D	16
"	110	E	46
"	110	F	36
"	110	H	36
"	111	A	25
"	210	A	40
"	210	C	27
"	215	A	32
"	220	A	7
"	214		11
PLSC	110	A	13
"	110	C	26
"	110	B	1
"	210	A	5
RADO	110	A	6
RECR	110	A	34
"	110	B	17
"	130	A	13
"	210	A	29
"	221	A	18
"	240	A	39
RLGN	140	A	11
"	160	A	5

SLGY	110	A	45
"	110	B	58
"	110	C	37
"	110	D	11
"	110	E	31
"	110	F	30
"	110	G	29
"	210	A	26
"	210	B	27
"	212	A	17
"	212	B	10
SPCH	110	A	41
"	110	B	17
"	110	C	36
"	110	D	32
"	110	E	29
"	110	F	21

B & E

SPRING 1968

ACCT.	101	A	6	
BIOL.	110	S	70	
"	111	A	46	D.J. Turner
"	111	B	23	"
"	114	A	22	R. Steadman
"	114	B	39	"
"	115	A	28	G.D. Burgess
"	211	F	13	E.L. Bates
BUSN.	101	A	6	K.R. Walker
"	111	A	16	N.E. Brown
"	111	B	14	K.R. Walker
"	111	C	13	"
"	111	D	14	"
"	223	A	20	H.M. Gutman
"	223	B	32	"
"	237		2	K.D. Rogers
"	237	A	15	"
"	237	B	26	"
CHED	111		1	J. Angus
"	213		3	R. Dyer
"	230		4	
"	233		1	J. Angus
"	241		4	P. Tilleman
"	251		1	"
"	264		6	"
CHEM.	111	A	15	E. Woytowich
CMSV.	111	A	14	F. Anderson
CMSV	111	E	11	F. Anderson
"	111	B	11	"
"	111	C	12	G. Spiro
"	111	D	10	F. Anderson
"	211	A	10	"
"	211	B	10	"
"	211	C	10	"
DRMA	110	A	9	T.C. Besse
"	114		6	"
"	115	B	5	"
ECON	111	A	29	A. James
"	111	D	40	B.E. Lee
"	111	F	15	"
"	111	G	16	A. James
"	111	H	11	"
"	111	I	6	"
"	211	A	4	B.E. Lee
ENGL.	110	S	27	J. Evans
"	110	T	14	Dr.Saad El-Gabalawy
"	111	A	27	Collier
"	111	B	31	Moseley
"	111	C	24	David Kelly
"	111	D	15	J. Evans
"	111	F	25	R. McDougall
"	111	G	30	S. Moseley
"	111	H	21	S. Moseley
"	111	I	24	B. Ratner

ENGL.	111	J	26	S. Moseley	GERM	110	A	1	J.S. MacKay
"	111	K	9	E. Park	GOUT	112	A	25	M. Law
"	111	L	20	Collier	"	112	B	11	E. Pitt
"	111	N	10	"	HIST.	111	A	12	E.Rutledge
"	111	P	21	B. Ratner	"	111	B	31	"
"	211	A	38	D. Kelly	"	113	A	64	"
"	211	B	40	"	"	113	D	33	"
"	211	C	23	R. McDougall	"	121	A	6	H. MacLeod
"	211	D	27	"	"	211	A	7	"
"	211	E	21	D. Kelly	INDS	111	A	17	A. Wawruch
"	211	F	10		"	111	B	20	"
"	213	A	14	Wilson	"	113	A	18	D. Weber
"	215	A	4	E. Park	"	113	B	13	G. Gordon
"	231		3	M. Spring	"	115	A	13	S. Roy
ENGR.	111		19	"	"	115	B	12	G. Gordon
"	211		10	"	"	119	A	25	K. Crawford
"	253		10	J. Webber	"	211		16	G. Gordon
FREN	111	A	5	J.S.MacKay	"	213		16	C. Rymes
"	211	A	3	M.A.Brydon	"	215		16	A. Wawruch
GEOG.	110	A	4	A.R.Thirnbeck	"	217		16	C. Rymes
"	111	A	4	N.Yudcovitch	"	219		16	
"	111	E	11	"	"	221		17	D. Weber
"	112	A	17	A.R.Thirnbeck	"	223		16	G. Gordon
"	211	A	8	C.H. Thomas	JRNL	111	A	12	J. Howse
"	221		2	"	"	111	B	8	"
GEOL.	110		10	M. Antonio	"	211		8	"
"	111	A	4	Naylur-McGugan	"	221		9	"
"	111	B	17	S.A. Bourne	MATH	103	A	32	R. Lamonaca
"	111	C	37	"	"	103	B	12	
"	211	A	11	J.E.Rapson-McGugan	"	103	C	10	"

MATH	105		1		PHED	126	A	2	Weight
"	113	A	16	R. Webber	"	126	B	2	
"	113	B	17		"	134	B	13	
"	121	A	17		"	134	C	20	
"	213		12	J.C. Kenyon	"	139	A	21	
"	224	A	15	R. Lamonaca	"	146		35	G. Gordon
MUSC	120		1	F. Smart	"	221	A	1	
NURS	110	S	31	M.Harrison&M.Peever	"	231	A	13	L. Thomas
"	112	S	19	E.Foster& E. Bury	PHIL	111	A	24	
PHED	102		14		"	211	A	13	G. Papas
"	102	A	14	D.Stouffer	PHYS	215		11	J. Webber
"	102	B	18		PLS	111	A	14	D. Thomas
"	103	A	14	Inglis	"	111	B	5	"
"	103	B	23	"	"	111	C	13	"
"	104	B	19	D.Stouffer	"	211	A	2	"
"	109	A	31	K. Loose	PSYCH	110	B	43	L.R. Morey
"	109	B	16	"	"	110	S	47	Hall
"	111	B	4		"	111	A	40	E. McDougall
"	113	A	5	R. Weight	"	111	C	27	"
"	113	B	4		"	111	D	12	W.R. Bate
"	115		1		"	111	E	36	F.J. Hawkes
"	115	A	3		"	111	F	31	L.R. Morey
"	115	B	12		"	111	H	26	H.B. Merkley
"	115	C	15		"	211	A	35	L.R. Morey
"	115	D	10		"	211	C	27	"
"	121	B	1		"	216	A	31	McDougall
"	121	C	2		"	221	C	5	Dean
"	121	D	2		RADO	111		6	H.B. Merkley
"	124		81	Vifian	RECR	111	A	31	H.A. Walters
"	125		3	Weight	"	111	B	16	"

RECR	131	A	15	H.A. Walters
"	211	A	22	
"	221		7	Brawn
"	221	A	3	"
	231		12	H.A. Walters
"	241	A	35	"
SLGY	110	S	49	B. Pashak
"	111	A	25	P. Gray
"	111	C	47	Mrs.C. Heath
"	111	D	13	B. Ratner
"	111	E	27	C. Heath
"	111	F	11	P. Gray
"	111	G	41	B. Ratner
"	211	A	19	B. Pashak
"	211	B	14	"
"	213		1	G. Caldwell
"	213	A	22	"
"	213	B	43	"
SPCH	111	A	21	T.C. Besse
"	111	B	12	"
"	111	C	22	"
"	111	D	32	D.M. Lauchlan
"	111	E	27	"
"	111	F	19	"

A & C

SPRING 1968

ECON	200	T	25	
ENGL	240	U	44	B. Wilson
"	240	Y	45	G.E. Mungan
"	240	S	49	Collier
"	240	T	51	S.M. Gabalawy
"	240	X	32	"
CHEM	230	T	27	D. Jardine
"	230		36	"
PSYC	202	U	44	
MATH	211	T	31	P.N. Webber
HIST.	205	T	33	H. McLeod
"	205	S	54	E.L. Pitt
SLGY	202	S	60	G.S. Teel
"	202	U	35	"
FREN	200	S	26	J. Mackay
SLGY	202	T	50	G.S. Teel
MATH	211	S	48	P.N. Webber
PSYC	202	T	46	
PHIL	241	S	38	G. Papas
CHEM	250	S	17	R. Calosing
BIOL	200	S	50	R. Sloan
"	200	T	34	"
GEOG	201	S	35	A. Thirnbeck & N. Yudcovitch

APPENDIX B-2

FULL TIME ENROLMENT AT MOUNT ROYAL JUNIOR COLLEGE

1967-1968

BASED ON GRANTS PAID BY THE DEPARTMENT OF EDUCATION [1]

Arts & Science A (Sept. - April)	90	
Arts & Science C (Sept. - April)	72	
Arts & Science A & S (Feb. - Aug.)	187	
Arts & Science A (Feb. - Aug.)	35	
	384	
Arts & Science B (Sept. - April)	516	
Program E	201	1101

[1] Source, Mr. Bredo, Department of Education, Edmonton.

APPENDIX C

AVERAGE COST OF INSTRUCTION

FOR GROUPS OF COURSES BY PROGRAM

PART I - A, CS PROGRAMS

Courses Offered in Program A (Humanities, Social Science & Arts)

Group I	Average Cost Per Student
Business 201	
Economics 200	$ 135
English 240	53
French 200	64
German 100	
German 200	
History 205	59 +
Mathematics 239	120
Philosophy 241	129
Political Science 200	128
Psychology 202	46
Social Studies 202	46
Average Instruction Cost Group I.	86
Group II (Laboratory Sciences)	
Biology 200	176
Chemistry 220	
Chemistry 230	171
Chemistry 250	246
Chemistry 350	
Geology 201	141
Geology 201	650
Mathematics 211	132
Average Instructional Cost Group II	(173 excluding Geology 201 (252 including Geology (enrolment 2)

Group 3 (Physical Education)

Physical Education 205	60
Physical Education 207	47
Physical Education 209	83
Average Instructional Cost - Physical Education	66

COURSES OFFERED IN PROGRAM "B"

Group 1 (Natural Science)

Biology 110 - Fundamentals of Biology	46
Biology 111 - Heredity and Evolution	86
Biology 114 - Anatomy and Physiology	30
Biology 115 - Biology of Parasitism	360
Biology 210 - Invertebrate Animals	
Biology 211 - Vertebrate Animals	125
Biology 212 - Non-vascular Plants	
Biology 213 - Vascular Plants	
Chemistry 101 - General Chemistry	
Chemistry 102 - General Chemistry	
Chemistry 110 - Principles of Chemistry	117
Chemistry 111 - Organic Chemistry	133
Chemistry 112 - Organic Chemistry	
Chemistry 113 - Organic Chemistry	
Chemistry 210 = Analytical Chemistry	
Geography 110 - Introduction to Geography	131
Geography 111 - Climate and Man	230
Geography 112 - Land Forms and Man	71
Geology 110 - Physical and Historical Geology	42
Geology 111 - Physical and Historical Geology	54
Geology 210 - General and Physical Geology	93
Geology 211 - General and Historical Geology	165
Mathematics 102 - Introduction to Elementary Algebra	84
Mathematics 103 - Elementary Algebra	
Mathematics 105 - Trigonometry	
Mathematics 107 - Solid Geometry	156

Mathematics 112 - Finite Mathematics	41
Mathematics 113 - Finite Mathematics	58
Mathematics 120 - Introduction to Calculus	84
Mathematics 121 - Introduction to Calculus	84
Mathematics 212 - Calculus	149
Mathematics 213 - Calculus	149
Physics 214 - Mechanics and Heat	
Physics 215 - Electricity, Magnetism and Wave Motion	155
Average Instructional Cost Group I.	110
Group II (Social Sciences)	
Economics 110 - Introduction to Economics	48
Economics 111 - Economic Analysis	61
Economics 210 - Introduction to Economic History	516
Economics 211 - Economic History of the Industrial Age	387
Geography 210 - Human Geography	608
Geography 211 - Human Geography	456
Geography 220 - Regional Geography	913
Geography 221 - Regional Geography	913
Government 112 - Government of the United States	62
Government 113 - Government of Canada	92
History 110 - History of Western Civilization	43
History 111 - History of Western Civilization	54
History 112 - History of the United States	40
History 113 - History of the United States	24
History 120 - History of Canada	82
History 121 - History of Canada	152
History 210 - Early European History	82

History 211 - Modern European History	130
Political Science 110 - The Nature of Political Science and the Dynamics of Government	63
Political Science 111 - The Structure and Administration of Government	93
Political Science 210 - Introduction to International Relations	168
Political Science 211 - Introduction to International Relations	421
Psychology 110 - General Psychology	24
Psychology 111 - General Psychology	30
Psychology 210 - Developmental Psychology	18
Psychology 211 - Developmental Psychology	19
Psychology 215 - Theories of Personality	30
Psychology 216 - Personality Adjustment - Normal and Abnormal	31
Psychology 220 - Psychological Statistics	154
Psychology 221 - Psychology of Learning	215
Sociology 110 - Introductory Sociology	26
Sociology 111 - Social Problems	42
Sociology 210 - Social Stratification	42
Sociology 211 - Race and Ethnic Relations	24
Sociology 212 - The Family	81
Sociology 213 - Criminology	45
Average Instructional Cost Group II	172
Group III (Humanities)	
Drama 114 - Fundamentals of Acting	131
Drama 115 - Fundamentals of Acting	189
Drama 120 - History of the Theatre	
English 110 - Principles of English Composition	42

English 111 - Principles of English Composition	46
English 210 - English Literature	62
English 211 - English Literature	36
English 212 - American Literature	64
English 213 - American Literature	73
English 214 - The English Novel	207
English 215 - The English Novel	258
English 216 - The Drama	
English 217 - The Drama	
English 218 - Canadian Literature	
English 219 - Canadian Literature	
English 220 - Business Communication and Expression	128
English 221 - Business Communication and Expression	
English 231 - Technical Writing	453
Fine Arts 100 - Introduction to Music and Art	
Fine Arts 101 - Introduction to Music and Art	
French 110 - College French	160
French 111 - College French	257
French 210 - French Writings	421
French 211 - French Writings	421
French 220 - French Comprehension	
German 110 - College German	468
German 111 - College German	936
German 210 - Second Year College German	
German 211 - Second Year College German	
Music 100 - Music Appreciation	
Music 120 - College Choir	

Music 124 - Orchestra	
Philosophy 110 - Introduction to Ancient Philosophy	106
Philosophy 111 - Introduction to Modern Philosophy	48
Philosophy 210 - Introduction to Logic	312
Philosophy 211 - Introduction to Ethics	120
Religion 110 - Biblical Foundations of Christian Faith	
Religion 114 - Catholic Dogma (Roman Catholic)	
Religion 116 - The Life and Teaching of Jesus (Latter Day Saints)	
Religion 118 - The Eternal Truths of Judaism (Jewish)	
Religion 124 - Man, Science and Religion	
Religion 140 - The Essentials of Group Work	
Religion 150 - Religion in Contemporary Literature	
Religion 160 - The Philosophy of Religion	
Religion 220 - World Religions	
Religion 230 - Religious Quest in the Modern Age	
Religion 240 - Christian Doctrine	
Religion 241 - Christian Doctrine	
Religion 250 - Church History	
Religion 251 - Church History	
Religion 260 - Modern Approaches to Christian Unity	
Religion 264 - Sociology of Religion	
Speech 110 - Fundamentals of Speech	21
Speech 111 - Fundamentals of Speech	28
Speech 210 - Advanced Speech Techniques	
Speech 211 - Advanced Speech Techniques	
Average Instructional Cost Group III	201

Group IV (Physical Education)

Physical Education 100 - Men's Activity Class	20
Physical Education 102 - Men's Activity Class	51
Physical Education 103 - Basketball Coaching	115
Physical Education 104 - Introduction to the History and Philosophy of Physical Education	128
Physical Education 105 - Field Games, Volleyball	84
Physical Education 106 - Women's Activity Class	63
Physical Education 107 - Elementary School Physical Education	
Physical Education 108 - Women's Activity Class	
Physical Education 109 - Social Dance	49
Physical Education 111 - Tumbling Apparatus	188
Physical Education 113 - Tumbling Apparatus	139
Physical Education 115 - Aquatics	69
Physical Education 121 - Swimming	69
Physical Education 123 - Skiing	
Physical Education 138 - Contemporary Dance	75
Physical Education 139 - Contemporary Dance	42
Physical Education 140 - Introduction to Health	75
Physical Education 141 - Anatomy and Physiology	
Physical Education 230 - Principles and Practices of Physical Conditioning	100
Physical Education 231 - First Aid and Athletic Injuries	15
Average Instructional Cost Group IV:	80

Group V (Other Courses)

Business 110 - Business Administration, Organization and Management	55
Business 111 - Business Administration, Organization and Management	87

Business 222 - Principles of Accounting	28
Business 223 - Principles of Accounting	38
Business 236 - Introductory Statistics	107
Business 237 - Business Statistics	88
Business 240 - Commerical Law	
Business 241 - Commercial Law	
Business 256 - Advertising	
Business 257 - Public Relations and Promotion	
Christian Education 110 - Old Testament Survey	
Christian Education 111 - New Testament Survey	2,176
Christian Education 160 - Philosophy of Religion	
Christian Education 213 - Counselling	725
Christian Education 221 - Curriculum and Worship	2,176
Christian Education 230 - Leadership	435
Christian Education 232 - Internship	
Christian Education 233 - Internship	
Christian Education 240 - Christian Doctrine	551
Christian Education 241 - Christian Doctrine	551
Christian Education 250 - Church History	2,206
Christian Education 251 - Church History	2,206
Christian Education 264 - Sociology of Religion	367
Average	1,265
Community Service 110 - Introduction to Community Service	73
Community Service 111 - Introduction to Community Service	73
Community Service 210 - Skills, Techniques and Methods	102
Community Service 211 - Skills, Techniques and Methods	102

Engineering 100 - Graphics	73
Engineering 111 - Descriptive Geometry	70
Engineering 120 - Engineering Problems	
Engineering 209 - Survey School	
Engineering 210 - Fundamentals of Surveying	110
Engineering 211 - Geometrology	136
Engineering 252 - Statics	102
Engineering 253 - Dynamics	136
Journalism 110 - Introduction to Journalism	73
Journalism 111 - General Reporting	91
Journalism 220 - Reporting Public Affairs	82
Journalism 221 - Free Lance Writing	101
Recreation 110 - Introduction to Recreation	46
Recreation 111 - Introduction to Recreation	50
Recreation 130 - Indoor-Outdoor Recreation	91
Recreation 131 - Indoor-Outdoor Recreation	79
Recreation 210 - Camping Education	24
Recreation 211 - Camping Education	32
Recreation 221 - Individual and Team Sport Planning	86
Recreation 222 - Administration of Playgrounds	
Recreation 240 - Internship and Seminar	15
Recreation 241 - Internship and Seminar	17
Secretarial Science 112 - Elementary Typewriting	
Secretarial Science 113 - Intermediate Typewriting	
Secretarial Science 120 - Elementary Shorthand	
Secretarial Science 121 - Elementary Shorthand	
Secretarial Science 210 - Advanced Typewriting	
Secretarial Science 213 - Intermediate Shorthand	

APPENDIX D

ESTIMATES OF INSTRUCTIONAL COSTS BY PROGRAM

The following estimates are based on Instructional costs set out in Appendix C and on program requirements from Mount Royal Junior College Calendar 1967-1968.

University of Calgary Programs (A, C, S, Programs)

1. General B.A. or B. Sc.

	Course	Cost Per Student
A.	English 240	$ 53
B.	Humanities or Social	86
C.	Laboratory Sciences	173
D.	2 Courses from Groups I and II.	172 or 346 depending on whether the courses were selected from Group I or II.
	Total	$ 484 or $658

The 'C' program cost would be approximately the same since the reduction in cost would be offset by the cost of the high school course.

2. B.Comm.

Course	Cost Per Student
English 240	$ 53
Economics 200	135
History 205	59
Business 201	86
1 option Humanities and Social Sciences (Group I)	86
Total	$ 419

Since most courses cost less than high school courses it is to be expected that the "C" program would cost some $20 - $30 more.

3. B. Education

Courses	Cost Per Student
English 240	$ 53
Psychology 202	46
Sociology 202	46
2 General (at $86)	172 (Assuming choice of Group I options)
Total	$ 317

"C" program costs would be higher as would costs if Group II options were selected.

4. Home Economics

Courses	Cost Per Student
English 240	$ 53
Chemistry 250	246
Economics 200	135
2 General	172 (Assuming coice of Group I options)
Total	$ 606

"C" program would be slightly lower since course costs are higher than average cost of high school courses.

5. Degree in Agriculture or Pre-Veterinary Agriculture

Courses	Cost Per Student
English 240	$ 53
Economics 200	135
Biology 200	176
Chemistry 230	171
Mathematics 211	132
Total	$ 667

"C" program would cost approximately the same.

6. Faculty of Medicine or Dentistry

Courses	Cost Per Student
English 240	$ 53
Chemistry 230	171
Mathematics 211	132
Biology 200	176
1 General	173 (Assuming Group II option)
Total	$ 705

Transfer Programs for entry into three or four year University Courses

(B Programs)

1. Program Outline for General B.A. or B.Sc.

First year

First Semester		Second Semester	
English 110	$ 30	English 111	$ 46
Physical Education	$ 80	Physical Education	$ 80

plus: Two courses - Group (1) $ 220
(2 x $ 110)
Six courses - Group 1 or 2 $ 660 or $ 1,032
(depending on choice of options)

Total Instructional Cost = $ 1,116 or $ 1,488 (depending on choice of options)

Second Year

First Semester		Second Semester	
English 210	$ 62	English 211	$ 36

plus: Eight courses - Group 1 or 2 $ 880 or $ 1,376 (depending on choice of options)

Total Instructional Cost = $ 978 or $ 1,474 (depending on choice of options)

2. Arts and Science with Major in applied Social Sciences

Program Outline

First Year

First Semester

Course	Cost Per Student
Sociology 110	$ 26
Psychology 110	24
English 110	42
Community Service 110	73
Physical Education	80
Biology 110	47
Total	$ 292

Second Semester

Course	Cost Per Student
Sociology 111	$ 42
Psychology 111	30
English 111	46
Community Service 111	73
Biology 111	160
Total	351

TOTAL COST PER YEAR	$ 643

Second Year

First Semester

Course	Cost Per Student
Sociology 210	$ 18
Psychology 210	42
Community Service 210	102
Physical Education	80
	$ 242

Second Year

Second Semester

Courses	Cost Per Student
Sociology 213	$ 19
Psychology 211	24
Community Service 211	102
plus: four electives, two of which must be from Group II or Group V.	Group II options $ 374 Group V options $ 148
TOTAL FOR SECOND YEAR	$ 909

3. Arts and Science with Major in Business Administration

Program Outline

First Year

First Semester

Courses	Cost Per Student
Business 110	$ 55
Economics 110	48
English 110	42
Speech 110	21
one of:	
Mathematics 102, 112 or 120	84
Psychology 110 or Sociology 110	24
Physical Education	80
Total	354

First Year

Second Semester

Courses	Cost Per-Student
Business 111	$ 87
Economics 111	61
English 111	46
Speech 111	28
one of:	
Mathematics 102, 113 or 121	70
one of:	
Psychology 111 or Sociology 111	42
Physical Education	80
Total	414

TOTAL COST FIRST YEAR	$ 768

Second Year

First Semester

Course	Cost Per Student
Business 222	$ 28
Business 236	107
English 210	62
Geology 110	42
Government 112	62
Total	$ 301

Second Semester

Course	Cost Per Student
Business 223	$ 38
Business 237	88
English 211	36
Geology 111	54
Government 112	92
Total	$ 308

TOTAL COSTS SECOND YEAR	$ 609

4. Arts and Science with Major in Engineering

Program Outline

First Year

First Semester

Course	Cost Per Student
Chemistry 110	$ 117
Engineering 110	73
English 110	42
Mathematics 120	84
Mathematics 107	156
Physical Education	80
Total	$ 552

Second Semester

Course	Cost Per Student
Chemistry 111	$ 133
Engineering 111	70
English 111	46
Mathematics 121	84
Government 112	62
Physical Education	80
Total	475

TOTAL FIRST YEAR	$1027

Second Year

First Semester

Course	Cost Per-Student
Physics 214	$ 155
Mathematics 212	149
Engineering 252	136
Geology 210	93
History 112	40
Economics 110	48
Total	$ 621

Second Year

Second Semester

Course	Cost Per Student
Physics 215	$ 155
Engineering 253	136
Mathematics 213	149
Engineering 211	136
Economics 111	61
English 231	453
Total	$1090

TOTAL COST SECOND YEAR $1711

JOURNALISM

PROGRAM OUTLINE

First year

First Semester

Course	Cost per student
Social Science 104	$ 24
Literary Arts 106	42
Journalism 110	73
Political Economy 102	63
Business 256	60
Physical Education	80
	342

Second Semester

Course	Cost per student
Social Science 105	$ 42
Literary Arts 107	46
Journalism 111	91
Political Economy 103	93
Business 257	60
	332

Full year total $672.

TERMINAL OR VOCATIONAL PROGRAMMES (E PROGRAMMES)

INTERIOR DESIGN

First year

First Semester

Course	Cost per student
Political Economy 102	$ 63
Social Science 104	24
Literary Arts 106	42
Interior Design 110	18
Interior Design 112	27
Interior Design 114	80
Interior Design 116	15
Interior Design 118	20
	289

Second Semester

Course	Cost per student
Political Economy 103	$ 93
Social Science 105	42
Literary ARts 107	46
Interior Design 111	37
Interior Design 113	25
Interior Design 115	121
Physical Education	80
	444
Total for 1 year	$733